Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A sensor for detecting an analyte in a fluid, wherein said sensor comprises a layer comprising conductive modified particles, wherein the layer comprising conductive modified particles has a preexisting resistance that is altered in the presence of the analyte, wherein said conductive modified particles comprise carbon products or colored pigments having at least one organic group covalently bonded to the particles,

wherein the sensor includes an electrical measuring apparatus electrically connected to the layer comprising conductive modified particles that detects an alteration in the preexisting resistance of the layer in the presence of the analyte, and

wherein said conductive modified particles comprise an aggregate comprising a carbon phase and a silicon-containing species phase, wherein said aggregate optionally has attached at least one organic group.

2. – 11. (Canceled).

12. (Currently Amended) The sensor of claim [[10]] 1, wherein said organic group comprises at least one aromatic group, at least one C_1-C_{100} alkyl group, or mixtures thereof.

13. (Currently Amended) The sensor of claim [[10]] 1, wherein said organic group comprises a polymeric group.

14. (Currently Amended) The sensor of claim [[10]] 1, wherein said organic group further comprises at least one ionic group, ionizable group, or both.

15. (Currently Amended) The sensor of claim [[10]] 1, wherein said organic group comprises a polymer, an alkane, an alkene, an alkyne, a diene, an alicyclic hydrocarbon, an arene, a heterocyclic, an alcohol, an ether, a ketone, an aldehyde, a carbonyl, a carbanion, a polynuclear aromatic or a derivative of organic, functional group, a chiral

group, a polyethylene glycol, a surfactant, a detergent, a biomolecule, a polysaccharide, a protein complex, a polypeptide, a dendrimeric material, an oligonucleotide, a fluorescent moiety, or radioactive group.

16. (Currently Amended) The sensor of claim [[10]] 1, wherein said organic group comprises a 18-carbon alkyl group, a 4-carbon alkyl group, an alkyl ester, an oligoether, an anionic group, a poly(chloro-methylstyrene), or a poly(alkylacrylate).

17. (Currently Amended) The array of sensors according to claim [[2]] 1, wherein said sensor array comprises two or more sensors for detecting an analyte in a fluid, wherein at least at least one of the sensors comprises the sensor of claim 1, and wherein each sensor provides a different response for the same analyte with a detector that is operatively associated with each sensor.

18. (Currently Amended) The array of sensors according to claim [[2]] 1, wherein said sensor array comprises two or more sensors for detecting an analyte in a fluid, wherein at least at least one of the sensors comprises the sensor of claim 1, and wherein at least two sensors each comprise a layer comprising conductive modified particles, wherein the conductive modified particles for each sensor are different from each other.

19. – 21. (Canceled).

22. (Currently Amended) An array of sensors for detecting an analyte in a fluid, said sensor array comprising:

a first and a second sensor electrically connected to an electrical measuring apparatus, wherein said first sensor comprises a region of nonconducting material and a region comprising conductive modified particles; and an electrical path through said region of nonconducting material and said region comprising conductive modified particles, wherein the region of nonconducting material and the region comprising conductive modified particles have a preexisting resistance that is altered in the presence of the analyte, wherein said conductive modified particles comprise carbon products or colored pigments having at least one organic group covalently bonded to the particles, aggregates comprising a carbon phase

and a silicon-containing species phase and optionally having attached at least one organic group, aggregates comprising a carbon phase and metal-containing species phase optionally having attached at least one organic group, silica-coated carbon blacks, or combinations thereof and wherein the electrical measuring apparatus detects an alteration in the preexisting resistance in the presence of the analyte,

wherein said conductive modified particles comprise an aggregate comprising a carbon phase and a silicon-containing species phase, wherein said aggregate optionally has attached at least one organic group.

23. (Original) The array of sensors according to claim 22, wherein said second sensor is selected from a surface acoustic wave (SAW) sensor, a quartz microbalance, an organic semiconducting gas sensor, a bulk conducting polymer sensor, a polymeric coating on an optical fiber sensor, conducting/nonconducting regions sensor conducting filler in insulating polymer sensors, dye impregnated polymeric coating on an optical fiber, a polymer composite, a micro-electro-mechanical system device, a micromachined cantilever, or a micro-opto-electromechanical system device.

24. – 32. (Canceled).

33. (Currently Amended) The array of sensors according to claim [[31]] 22, wherein said organic group comprises at least one aromatic group, at least one C_1-C_{100} alkyl group, or mixtures thereof.

34. (Currently Amended) The array of sensors according to claim [[31]] 22, wherein said organic group comprises a polymeric group.

35. (Currently Amended) The array of sensors according to claim [[31]] 22, wherein said organic group further comprises at least one ionic group, ionizable group, or both.

36. (Currently Amended) The array of sensors according to claim [[31]] 22, wherein said organic group comprises a polymer, an alkane, an alkene, an alkyne, a diene, an alicyclic hydrocarbon, an arene, a heterocyclic, an alcohol, an ether, a ketone, an aldehyde, a carbonyl, a carbanion, a polynuclear aromatic or a derivative of organic, functional group, a chiral group, a polyethylene glycol, a surfactant, a detergent, a biomolecule, a polysaccharide, a protein complex, a polypeptide, a dendrimeric material, an oligonucleotide, a fluorescent moiety, or radioactive group.

37. (Currently Amended) The array of sensors according to claim [[31]] 22, wherein said organic group comprises a 18-carbon alkyl group, a 4-carbon alkyl group, an alkyl ester, an oligoether, an anionic group, a poly(chloro-methylstyrene), or a poly(alkylacrylate).

38. – 41. (Canceled).

42. (Currently Amended) A sensor for detecting an analyte in a fluid, wherein said sensor comprises a layer comprising conductive modified particles, wherein the layer comprising conductive modified particles has a preexisting resistance that is altered in the presence of the analyte, wherein said conductive modified particles comprise carbon products or colored pigments having at least one organic group directly attached to the particles,

wherein the sensor includes an electrical measuring apparatus electrically connected to the layer comprising conductive modified particles that detects a change in the preexisting resistance of the layer in the presence of the analyte, and

wherein the change in the preexisting resistance is due to a change in the electrical properties across more than one of the conductive modified particles within the layer,

wherein each of the conductive modified particles is an aggregate comprising a carbon phase and a silicon-containing species phase having attached at least one organic group.

43. (Previously Presented) The sensor according to claim 42, wherein the at least one organic group is covalently attached to the particles.

44. (Previously Presented) The sensor according to claim 42, wherein the at least one organic group directly attached to the particles is of the chemical form –X-Sp-$[A]_p$-R where X is attached to the particle and represents an aromatic or alkyl group, Sp is a spacer group, A is an alkylene oxide or polymer and R is a terminal group.

45. (Previously Presented) The sensor according to claim 1, wherein the at least one organic group directly attached to the particles is of the chemical form –X-Sp-$[A]_p$-R where X is attached to the particle and represents an aromatic or alkyl group, Sp is a spacer group, A is an alkylene oxide or polymer and R is a terminal group.

46. (Canceled).

47. (Previously Presented) The sensor according to claim 1, wherein conductivity between the conductive modified particles within the layer changes due primarily to particle-to-particle distance changes between the conductive modified particles within the layer when the analyte is introduced to the sensor, and wherein the preexisting resistance of the layer changes accordingly.

48. (Previously Presented) The sensor according to claim 1, wherein the organic group is selected from the group consisting of: $-C_6H_4-COO^-X^+$, $-C_6H_4-SO_3^-X^+$, $-C_6H_4-(PO_3)^{-2}2X^+$, $-C_6H_2-(COO^-X^+)_3$, $-C_6H_3-(COO^-X^+)_2$, $-(CH_2)_z-(COO^-X^+)$, $-C_6H_4-(CH_2)_z-(COO^-X^+)$, wherein X+ is a caton selected from the group consisting of Na^+, H^+, K^+, NH_4^+, Li^+, Ca_2^+, and Mg^+, and z is an integer between 1 and 18 inclusive.

49. (Previously Presented) The sensor according to claim 42, wherein the organic group is selected from the group consisting of: $-C_6H_4-COO^-X^+$, $-C_6H_4-SO_3^-X^+$, $-C_6H_4-(PO_3)^{-2}2X^+$, $-C_6H_2-(COO^-X^+)_3$, $-C_6H_3-(COO^-X^+)_2$, $-(CH_2)_z-(COO^-X^+)$, $-C_6H_4-(CH_2)_z-(COO^-X^+)$, wherein X+ is a caton selected from the group consisting of Na^+, H^+, K^+, NH_4^+, Li^+, Ca_2^+, and Mg^+, and z is an integer between 1 and 18 inclusive.

50. (Currently Amended) A method for detecting the presence of an analyte in a fluid, said method comprising:

providing a sensor array comprising at least two sensors, wherein at least one sensor comprises a layer comprising conductive modified particles wherein the layer comprising

conductive modified particles has a preexisting resistance that is altered in the presence of the analyte and wherein the at least one sensor includes an electrical measuring apparatus electrically connected to the layer comprising conductive modified particles that detects an alteration in the preexisting resistance of the layer in the presence of the analyte;

each sensor having an electrical path through the sensor;

contacting said sensor array with said analyte to generate a response; and

detecting said response with a detector that is operatively associated with each sensor, and thereby detecting the presence of said analyte, wherein said conductive modified particles comprise carbon products or colored pigments having at least one organic group directly attached to the particles,

wherein the change in the preexisting resistance is due to a change in the electrical properties across more than one of the conductive modified particles within the layer,

wherein each of the conductive modified particles is an aggregate comprising a carbon phase and a silicon-containing species phase having attached at least one organic group.

51. (Previously Presented) The method according to claim 50, wherein the at least one organic group is covalently attached to the particles.

52. (Previously Presented) The method according to claim 50, wherein the at least one organic group directly attached to the particles is of the chemical form –X-Sp-$[A]_p$-R where X is attached to the particle and represents an aromatic or alkyl group, Sp is a spacer group, A is an alkylene oxide or polymer and R is a terminal group.

53. (Previously Presented) The method according to claim 19, wherein the at least one organic group directly attached to the particles is of the chemical form –X-Sp-$[A]_p$-R where X is attached to the particle and represents an aromatic or alkyl group, Sp is a spacer group, A is an alkylene oxide or polymer and R is a terminal group.

54. – 56. (Canceled).

57. (Previously Presented) The method according to claim 50, wherein the organic group is selected from the group consisting of: $-C_6H_4-COO^-X^+$, $-C_6H_4-SO3^-X^+$, $-C_6H_4-(PO3)^{-2}2X^+$, $-C_6H_2-(COO^-X^+)_3$, $-C_6H_3-(COO^-X^+)_2$, $-(CH_2)_z-(COO^-X^+)$, $-C_6H_4-(CH_2)_z-$

(COO^-X^+), wherein X+ is a caton selected from the group consisting of Na^+, H^+, K^+, NH_4^+, Li^+, Ca_2^+, and Mg^+, and z is an integer between 1 and 18 inclusive.

58. (Previously Presented) The sensor according to claim 1, wherein the alteration in the preexisting resistance of the layer in the presence of the analyte is a result of swelling of the layer comprising conductive modified particles.

59. (Canceled).

60. (Previously Presented) The array of sensors according to claim 22, wherein the alteration in the preexisting resistance of the layer in the presence of the analyte is a result of swelling of the layer comprising conductive modified particles.

61. (Previously Presented) The method according to claim 50, wherein the change in the preexisting resistance of the layer is due to a changed separation distance between adjacently-positioned ones of the conductive modified particles within the layer, caused by swelling of the layer.